Oct. 25, 1949. F. G. WERTZ 2,485,947

FLARE BLOCK FOR RAILWAY CROSSINGS AND THE LIKE

Filed July 30, 1948

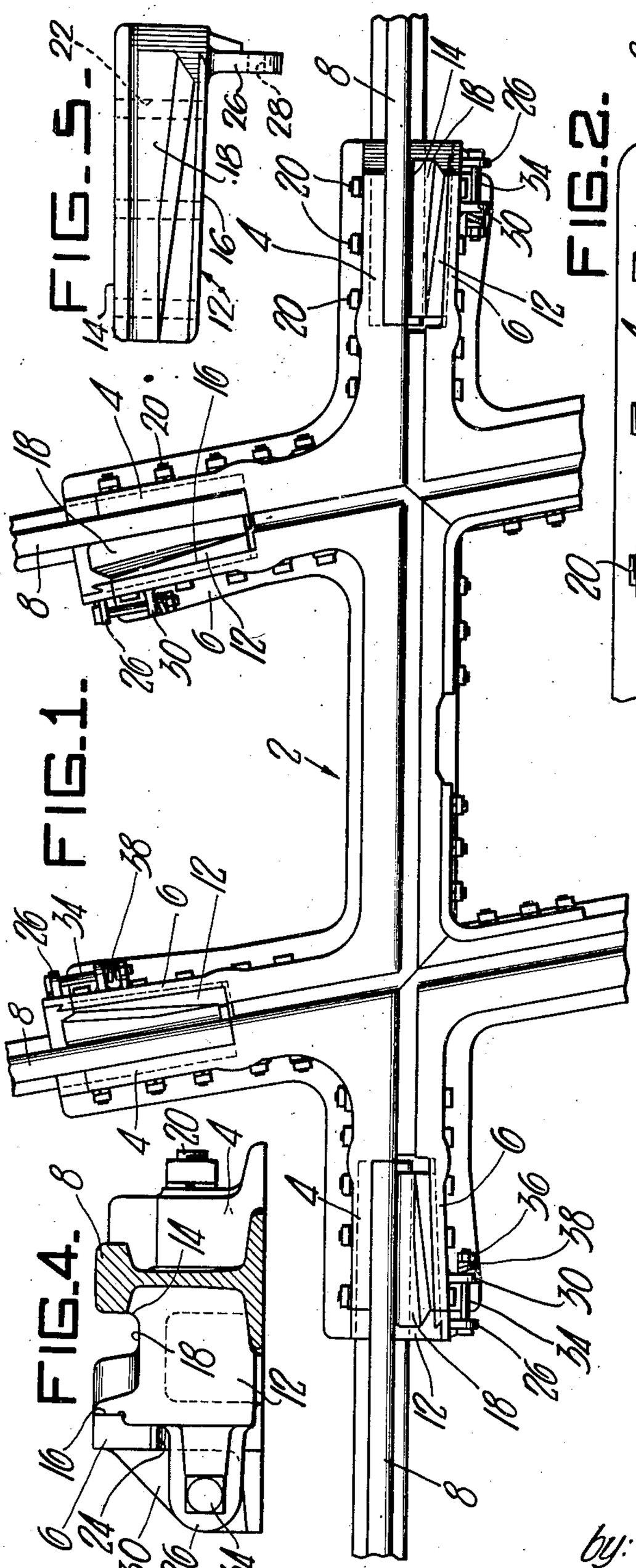

FIG. 1.

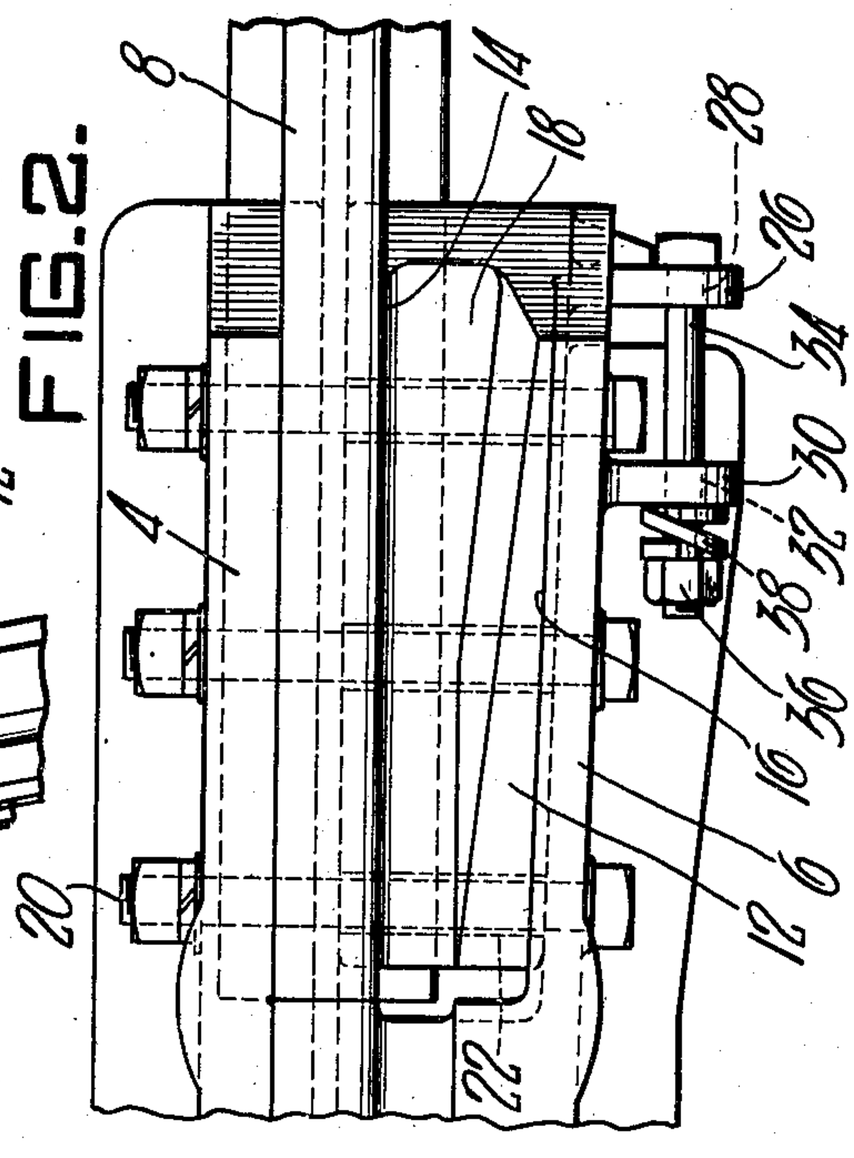

FIG. 2.

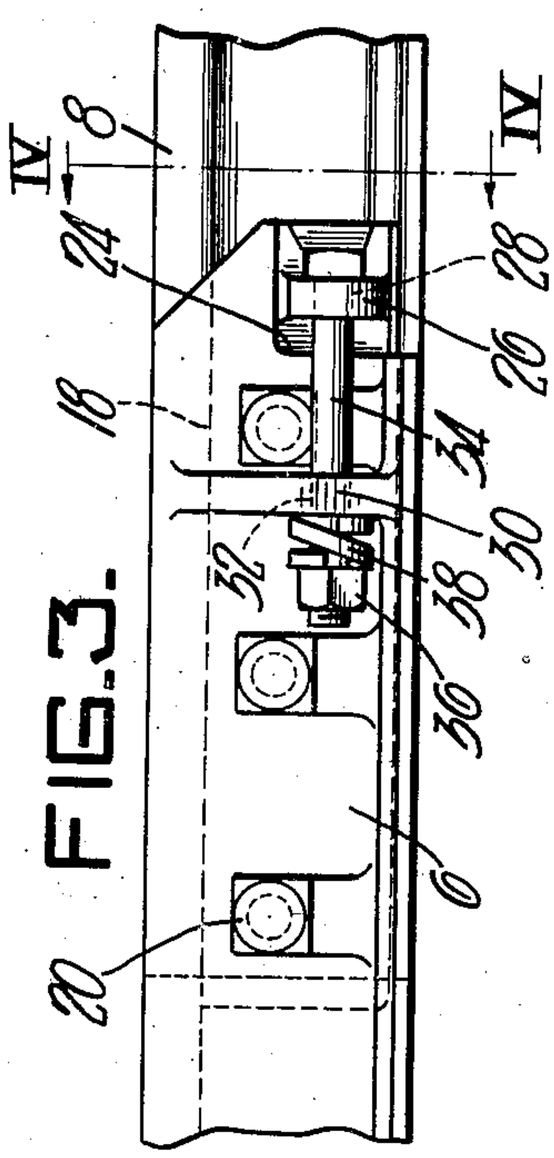

FIG. 3.

FIG. 4.

FIG. 5.

Inventor:
FRANK G. WERTZ,
by: Donald G. Dalton
his Attorney.

Patented Oct. 25, 1949

2,485,947

UNITED STATES PATENT OFFICE

2,485,947

FLARE BLOCK FOR RAILWAY CROSSINGS AND THE LIKE

Frank G. Wertz, Johnstown, Pa., assignor to Carnegie-Illinois Steel Corporation, a corporation of New Jersey

Application July 30, 1948, Serial No. 41,516

3 Claims. (Cl. 246—465)

1

This invention relates to flare blocks used in railroad track crossings of the articulated design and more particularly to a flare block which is automatically adjustable.

In the construction of conventional cast track crossings of the articulated design, a solid flare block is used between the running rail and the outside arm to maintain a tight connection between the running rail assembly and the main body casting. The flare block is held in position by horizontal bolts which pass through the inner and outer crossing arms, the running rail, and the flare block. The running rail is held in place and in connection with the main body crossing by pulling up the horizontal bolts tight enough to deflect the crossing arms. However, the vibrations and shocks occasioned by passing trains cause wear on the surfaces of the cast crossing, the rail web, and the lateral surfaces of the flare block so that the running rail and the flare block become loose in a relatively short time. This looseness is eliminated temporarily by tightening up the horizontal bolts still further. The effect of this remedy, however, is of short duration since surface wear is accelerated once looseness develops and in the usual course of railroad operation it is impossible to detect such looseness at the moment it occurs. As the looseness develops, progressively greater deflection of the crossing arms is necessary to hold the running rail in position. There is a limit, however, to the amount of deflection that may be effected by tightening up the horizontal bolts and when this limit is reached the entire flare block assembly must be disassembled and replaced.

The flare block, referred to above, is a casting having one straight side which fits the vertical contour of the running rail and a horizontally tapered face on the opposite side which fits against the outer arm of the main body casting. The wedge effect of the flare block and the pulling up of the horizontal bolts, which pass through moderately loose holes in the flare block, permit only initial tight assembly. For safe operating conditions, it is essential that the running rail be maintained in position at all times.

It is highly desirable, therefore, that means be provided for automatically taking up the clearances which develop in a crossing assembly immediately when wear and looseness occur in order to prevent accelerated wear and consequently reduce the amount of maintenance attention required.

It is accordingly an object of my invention to

2

provide a self-tightening flare block for use in cast crossing assemblies.

This and other objects will become more apparent after referring to the following specification and attached drawing in which:

Figure 1 is a top plan view of a crossing embodying my invention;

Figure 2 is an enlarged detail thereof;

Figure 3 is a side elevation;

Figure 4 is an end view taken on the line IV—IV of Figure 3; and

Figure 5 is a plan view of the flare block of my invention.

Referring more particularly to the drawing, reference numeral **2** indicates a cast railroad track crossing of the articulated type having an outer crossing arm **4** and an inner crossing arm **6**. A running rail **8** is fitted adjacent the outer crossing arm **4** in the space between the crossing arms. A wedge-shaped flare block **12** is inserted between the rail **8** and the inner arm **6**.

One side **14** of the flare block **12** is parallel to and fits the contour of the web of rail **8** while the opposite side **16** is tapered and fits the contour of the inner crossing arm **6**, thus providing a wedge fit. A longitudinal groove **18** is provided in the top surface of the flare block **12** to accommodate the flange of a wheel riding on the running rail **8** and properly guide the same.

Horizontal bolts **20**, which pass through the inner crossing arm, the running rail, the flare block, and the outer crossing arm, maintain these members in side-by-side relationship. Bolt holes **22**, in the flare block **12**, are slightly larger in diameter than the diameter of the shafts of the bolts **20** so as to permit a certain amount of longitudinal movement of the flare block, i. e. a lost motion mounting for said flare block. The end of the inner crossing arm **6** is provided with a cut-away portion **24**. A lug **26** on the flare block **12** projects into this space and has a bolt hole **28** therethrough. Projecting laterally from the inner crossing arm **6**, adjacent its cut-away portion **24**, is a matching lug **30** which is also provided with a bolt hole **32**. Lugs **26** and **30** are connected by means of a bolt **34** having a nut **36** threaded on its end. A helical compression spring **38** surrounds the bolt **24** between the nut **36** and the lug **30**.

In operation, the block is inserted between the running rail **8** and the inner crossing arm **6** with its bolt holes in alignment with the bolt holes in the crossing arms and the running rail. The horizontal bolts **20** are then inserted through the members of the assembly and drawn up tightly.

The bolt 34 is then passed through holes 28 and 32 in lugs 26 and 30, the spring 38 fitted over its shaft, and the nut 36 tightened on its end. Tightening of nut 36 compresses the spring 38 so that the tapered flare block 12 is constantly urged inwardly to take up any looseness when the assembly is vibrated by passing trains. The slightly enlarged bolt holes 22 in the flare block 12 make it possible for the flare block to be moved sufficiently to take up the clearances. Applying this adjustment directly to the flare block reduces the number of pieces in the assembly and, of course, the proportionate amount of wear. It can also be seen that the amount of maintenance attention required is substantially reduced by the automatic operation of the flare block since it eliminates the need for tightening up the horizontal bolts to take up looseness caused by wear.

While one embodiment of my invention has been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. A flare block assembly for an articulated railway rail crossing comprising two crossing arms in spaced relationship, a running rail in the space intermediate said crossing arms adjacent one of said arms, a flare block disposed intermediate said running rail and said other crossing arm, said arms, rail, and flare block being bolted together, said flare block having bolt holes therethrough larger in diameter than the diameter of the holding bolts to provide a lost motion mounting for said flare block, and resilient means for urging said flare block inwardly between said running rail and said crossing arm.

2. A flare block assembly for an articulated railway rail crossing comprising two crossing arms in spaced relationship, a running rail in the space intermediate said crossing arms adjacent one of said arms, a flare block disposed intermediate said running rail and said other crossing arm, said arms, rail, and flare block being bolted together, said flare block having bolt holes therethrough larger in diameter than the diameter of the holding bolts to provide a lost motion mounting for said flare block, said flare block having a flange groove in its top surface adjacent said running rail, a laterally projecting lug having a bolt hole therethrough on the crossing arm adjacent said flare block, a matching lug having a bolt hole therethrough projecting laterally from the end of said flare block in spaced relationship with said first named lug on said crossing arm, said lugs being connected by a bolt having a nut threaded on its end, and a helical compression spring around the shaft of said bolt, the spring bearing against the nut on one end and against one of said lugs on the other end to thereby urge said flare block inwardly between said rail and said crossing arm.

3. A flare block assembly as defined in claim 1 characterized by a laterally projecting lug on the crossing arm adjacent said flare block, a matching lug projecting laterally from the end of said flare block in spaced relation from said first named lug on said crossing arm, and said resilient means connecting said lugs.

FRANK G. WERTZ.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,067,699	Wertz et al.	July 15, 1913
1,395,339	Gibbs	Nov. 1, 1921
1,527,053	McGinniess	Feb. 17, 1925